

REMARKS

This is in full and timely response to the above-identified Office Action. The above listing of the claims supersedes any previous listing. Favorable reexamination and reconsideration are respectfully requested in view of the preceding amendments and the following remarks.

Claim Amendments

In this response, claim 8 has been amended to include the limitations of claim 4 and thus call for the nitride semiconductor crystal film to be limited to a thickness of 1-10 micrometers. Claim 4 has been cancelled.

Rejections under 35 USC § 103

- 1) The rejection of claims 2-3, 5 and 7-10 under 35 USC § 103(a) as being unpatentable over Orita et al. in view of Nakamura et al. is respectfully traversed.

The references applied in this rejection do not disclose the limitation which has been incorporated into independent claim 8.

If the thickness of the nitride semiconductor crystal film is less than 1 micrometer, it is difficult to have this film successfully function as a crystal film for use in the formation of subsequent nitride semiconductor layers constituting a light emitting structure. However, on the other hand, if the thickness of the nitride semiconductor crystal film exceeds 10 micrometers, then due to differences in lattice constraints and thermal expansion coefficients between the nitride crystal film and sapphire substrate for use in the growth of the nitride semiconductor layers, the substrate becomes bent/warped, thus preventing heat from being uniformly transmitted throughout the upper surface of the substrate. Indeed, in severe cases there is a possibility of damage to the substrate itself.

These issues are not dealt with in this Office Action and nothing has been advanced as to why the cited art would render claimed thickness limitations obvious. Indeed, as the Examiner is aware, in order to establish a *prima facie* case of obviousness, it is necessary to show that the hypothetical person of ordinary skill would, without any knowledge of the claimed subject matter and without any inventive activity, be motivated to arrive at the claimed subject matter given the guidance of the cited references when each is fully considered as statutorily required.

- 2) The rejection of claim 6 under 35 USC § 103(a) as being unpatentable over Orita et al. in view of Nakamura et al. and further in view of Lee et al. is respectfully traversed.

In this rejection it is acknowledged that Orita et al. does not teach nitridation of the substrate. Lee et al. teach that this is known. However, that is all that is relied upon and the rejection is then based on the assertion that nitridation gives high quality nitride based semiconductor layers. That being said, there is nothing in the rejection indicating why Orita et al. or Nakamura et al. would suggest that an improvement is necessary nor suggest that an additional cost incurring step is required. Indeed, the only source which suggests the process that Orita et al. admittedly does not disclose, apparently is the Applicants' disclosure.

At one time in the past, the PTO advanced the position that one of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re Clinton* 188 USPQ 365,367 (CCPA 1976) and *In re: Thompson* 192 USPQ 275,277 (CCPA 1976). (Emphasis added)

Now, in that neither of Orita et al. or Nakamura et al. mention the need for the extra nitridation process and this would without doubt be considered by the hypothetical person of ordinary skill to add to complexity of the process and therefore cost of the final product, there appears to be more than an alleged improvement needed to justify consideration of Lee et al. and the additional process/cost.

It is therefore submitted that the necessary motivation has not been advanced in a manner that would allow a *prima facie* case of obviousness to be established.

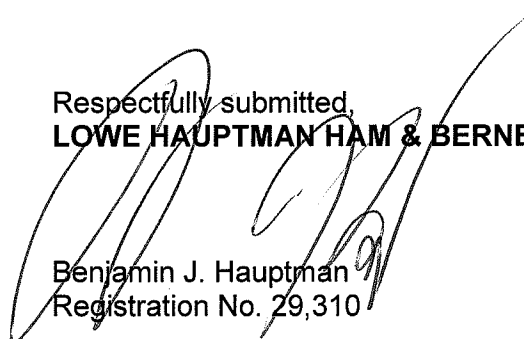
Conclusion

It is respectfully submitted that the claims as they have been amended are allowable over the art which has been applied in this Office Action. Favorable reconsideration and allowance of

this application are courteously solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,
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